



Death Valley National Park Regional Flow System Science and Management 2004 and Beyond...

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NPS Mission Statement

- The service ... shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations ...which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

National Park Service



EXPERIENCE
YOUR
AMERICA

What water resources is NPS responsible for managing and protecting?

- Devil's Hole
- Furnace Creek area springs
 - Texas, Travertine, Nevares
- Lower Amargosa River
- Badwater Basin
- Other regionally fed springs
 - Grapevine, Staininger, Saratoga



Three Biggest Concerns for the Death Valley Region

- Decline in population of Devil's Hole pupfish
- Impacts from existing pumping
- Over appropriation of water resources
 - Misconception of what is available
 - Increased demands on resources



Questions the Park needs answered

- Is the lower carbonate aquifer near Yucca Mountain hydraulically connected to springs in the park?
- What is the magnitude and timing of impacts from ground-water pumping?
- What is the cause of population declines of the Devil's Hole pupfish?
- What is the cause of water level declines at Devil's Hole? (are the two related?)
- What are the structural controls on ground-water movement in the Ash Meadows area?



What decisions does the NPS face in regard to these issues?

- What actions should the NPS take to protect our resources?
- What tools does the NPS need to protect our resources?
- How do we allocate limited funding to meet our responsibilities?



Questions posed by Nye County

- Where does the biggest source of uncertainty rest in your questions?
- What are three biggest impacts of this uncertainty?
- What could reduce the impact of uncertainty on decisions?
- Does reducing uncertainty save lives, money, time, the environment?



Uncertainty

- Might be more appropriate to ask what is the risk of uncertainty?
- Uncertainty does not necessarily result in an impact but it does imply that there is a risk that an impact will occur
- The risk is that impacts occur to the resources we are required to protect



Sources of Uncertainty

- Scale - too big
- Data - too little
- Solution - non-unique



Reducing the Impacts of Uncertainty

- What we really want to know is how do we reduce the risk that impacts will occur to our resources
- How do we use limited funds to help us make sound management decisions



Value of Uncertainty Reduction

- Our responsibility is to conserve the scenery, natural and historic objects, and wildlife and to provide for the enjoyment of the same for future generations
- Reducing uncertainty may or may not help us meet our responsibilities; it narrows the range of potential outcomes.
- We may be able to reduce the risk of allowing harmful impacts to occur without reducing uncertainty (for example: choosing conservative approach reduces the risk)



Collaborators

BLM

USGS

USFWS

DOE

Inyo County

Nye County

Southern Oregon University (pupfish)

Desert Managers Group (DOI)



Future Plans

- Next 18 Months (limited funds)
 - continued support of independent consultants for specific tasks
 - Continued collaboration with partners
- Long term
 - development of predictive tool to evaluate potential impacts
 - better definition of the Ash Meadows flow system
 - new partnerships?